

Date: Fri, 27 May 94 04:30:25 PDT  
From: Ham-Homebrew Mailing List and Newsgroup <ham-homebrew@ucsd.edu>  
Errors-To: Ham-Homebrew-Errors@UCSD.Edu  
Reply-To: Ham-Homebrew@UCSD.Edu  
Precedence: Bulk  
Subject: Ham-Homebrew Digest V94 #142  
To: Ham-Homebrew

Ham-Homebrew Digest                      Fri, 27 May 94                      Volume 94 : Issue    142

Today's Topics:

                    Converting an old HT-220 to 2M (2 msgs)  
                    Help needed for external 22AT power  
          How can I reduce RFI from flourescent lights? (2 msgs)  
                    pcb laser printer iron method  
                    SSB Filters (2 msgs)  
                    Transmitting Tube Cooling

Send Replies or notes for publication to: <Ham-Homebrew@UCSD.Edu>  
Send subscription requests to: <Ham-Homebrew-REQUEST@UCSD.Edu>  
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Homebrew Digest are available  
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-homebrew".

We trust that readers are intelligent enough to realize that all text  
herein consists of personal comments and does not represent the official  
policies or positions of any party. Your mileage may vary. So there.

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Date: 26 May 1994 13:21:04 GMT  
From: ihnp4.ucsd.edu!usc!howland.reston.ans.net!spool.mu.edu!bloom-beacon.mit.edu!  
senator-bedfellow.mit.edu!space.mit.edu!crispy@network.ucsd.edu  
Subject: Converting an old HT-220 to 2M  
To: ham-homebrew@ucsd.edu

By the way, I have 5 Motorola HT-220 for sale. I would like \$35/ea or 150/all.

For more info, e-mail to crispy@space.mit.edu.

thanks,

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Christopher S. Pak  
Massachusetts Institute of Technology

Center for Space Research  
37-487  
77 Massachusetts Ave.  
Cambridge, MA 02139  
Phone: (617)253-9342  
Fax: (617) 253-0861  
E-mail: crispy@space.mit.edu

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Date: Thu, 26 May 1994 18:20:17 GMT  
From: pa.dec.com!crl.dec.com!nntpd.lkg.dec.com!ryn.mro.dec.com!est.enet.dec.com!  
randolph@decwrl.dec.com  
Subject: Converting an old HT-220 to 2M  
To: ham-homebrew@ucsd.edu

In article <1994May25.203349.11883@oracle.us.oracle.com>,  
usenet@oracle.us.oracle.com (Oracle News Poster) writes...  
> I have a Motorola Ht-220 Type CC3540 Serial # L06K2D Model H33FFN1100E.  
>It transmits and Receives on 163.5375 MHz. It has a 15 Volt NiCad. It is  
> xmit: 18170.8

The transmitter in these uses freq. triplers to get up from the xtal freq. to  
TX freq.  $18170.8 \times 3 \times 3 = 163537.2$ . Mine is a 462 MHz unit that has one more  
tripler to get up there.

> rcv: 48912.50

Let's see... receive xtal = (Tx freq - IF freq) / n; where n = 3,9,27 etc.  
Using n=3 we get an IF of 16.8 MHz, which sounds reasonable. International  
Crystal Mfg. has crystals for these radios - call them at 405 236 3741 and tell  
them what you have. You may need model number and "chassis number" which is a  
number like NUE6001BA that you can find inside the battery compartment. The  
xtals are a bit pricey - \$15 to \$25 each, but what the heck, I only paid \$10  
for the radio at a flea. You will need to re-tune the tuned circuits in the  
radio, and for this you will need the Motorola manual... try Motorola or a  
local service shop for that. I copied the 450-488 MHz radio manual that another  
ham here had around. Make sure whoever knows you are re-tuning to a ham  
band, or else they'll want to know your commercial license #!

By the way, I have a line on cheaper crystals from a different source, still  
waiting for someone to get back to me on that.

>There is also a "PL Reed" that I will probably need.

This is pre-microprocessor coded squelch technology. A tiny mechanical reed  
functions similar to a quartz crystal, except at audio freqs. If you're going  
to use the HT to get into a repeater with PL tone access you need it, otherwise

you don't, like for simplex. Mine came with one, but you could always add one of those tiny PL decode/encode boards from the back of QST.

> Last (and least?) I need a charger for the Ni-CAD.

Yah, these radios typically are placed in a "drop-in charger" which does the job. I'm not sure how I'm going to handle this myself... The battery that came in mine was good, though, and charged up to 15V no problem. Pick up a spare at a flea, as Moto wants something like \$75 for them.

> Doug N8TUT

Good luck with the mods! I'll be doing mine as soon as I find out about those cheap xtals! Makes an interesting project...

-Tom R. N100Q randolph@est.enet.dec.com

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Date: Thu, 26 May 1994 21:52:42 GMT  
From: ihnp4.ucsd.edu!library.ucla.edu!europa.eng.gtefsd.com!  
newsxfer.itd.umich.edu!nntp.cs.ubc.ca!unixg.ubc.ca!quartz.ucla.alberta.ca!  
tribune.usask.ca!sue!news@network.ucsd.edu  
Subject: Help needed for external 22AT power  
To: ham-homebrew@ucsd.edu

My Kenwood 22AT has only one external power input jack located on the side of the radio. Kenwood supplies a 12.5V 70ma adapter to use with the unit. The adapter charges the battery but does not have enough current to transmit with. I am planning on building a simple 12V 3A power supply to use with the radio. My concern is that I will be over charging the internal 6Volt 600ma battery. Should I be removing the battery when using an external high current power supply? Kenwood does not show a external AC power supply as an option for this radio, but they do have a car adapter- which could cause overcharging of the battery. Kenwood recommends a max of 15 hours using the 12.5V 70ma charger.

Any suggestions?

Thanks in Advance.

Mike Murray  
mmurray@leroy.cc.uregina.ca  
VE5EF

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Date: Thu, 26 May 1994 07:50:20 -0800

From: nwnexus!pt.olympus.net!ptpm004.olympus.net!user@uunet.uu.net  
Subject: How can I reduce RFI from flourescent lights?  
To: ham-homebrew@ucsd.edu

I have a beach cabin with solar panels & batteries for power. I use 12VDC flourescent lights in each room (made by REC Industries) with electronic ballasts. When the lights are turned on I get all kinds of squeals in the AM & SW bands. The 12 V negative line common to the solar panels & battery is grounded with a 10 foot ground rod (but driven into dry sand).

Any ideas how to quiet these lights? Now I have to turn them off to use the radio.

Also does anybody have experience with the small 12VDC to 120 VAC inverters (100W-200W)? Do they generate RFI also?

Thanks & 73  
(these ham newsgroups are great, full of the latest info.)

--  
philkeys@pt.olympus.net (Phil Keys) KB7WXQ  
Software Consultant - specializing in software safety & SQA  
Port Hadlock, WA 98339 (206) 379-8650  
West of Puget Sound.....South of British Columbia.... 122 44.0W 48 02.0N

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Date: Thu, 26 May 1994 16:58:42 GMT  
From: ihnp4.ucsd.edu!usc!howland.reston.ans.net!gatech!newsfeed.pitt.edu!gvls1!  
rossi@network.ucsd.edu  
Subject: How can I reduce RFI from flourescent lights?  
To: ham-homebrew@ucsd.edu

In article <philkeys-260594075020@ptpm004.olympus.net> philkeys@olympus.net (Phil Keys) writes:

>I have a beach cabin with solar panels & batteries for  
>power. I use 12VDC flourescent lights in each room  
>(made by REC Industries) with electronic ballasts.  
>When the lights are turned on I get all kinds of squeals  
>in the AM & SW bands. The 12 V negative line common to  
> the solar panels & battery is grounded with a 10 foot  
>ground rod (but driven into dry sand).  
>

>Any ideas how to quiet these lights? Now I have to  
>turn them off to use the radio.



LN2 1 JF  
England

Tel +44 522 520767

Often has surplus crystal filters in stock. I've bought a number of marine quality 1.4 MHz IF usb, lsb, cw filters from him

The best advice is to first find your filters, then use IF to suit.

Recently a lot of 1.4 MHz IF filters of superb performance have flooded onto the British market at very low surplus prices (I paid the equivalent of 40 francs each, although the prices fluctuate) Filters for AM RTTY and various CW bandwidths are also to be found as well as proper separate USB and LSB ones. I think of good government surplus components as a sort of tax refund!

Bon Chance!

David

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Date: Thu, 26 May 1994 11:26:38 GMT  
From: ihnp4.ucsd.edu!swrinde!cs.utexas.edu!howland.reston.ans.net!noc.near.net!usenet.elf.com!rpi!psinnntp!arrl.org!zlau@network.ucsd.edu  
Subject: SSB Filters  
To: ham-homebrew@ucsd.edu

Elendir F1RCS (elendir@enst.fr) wrote:

: I'm (still) planning to build a multimode multibander (VHF/UHF) rig.  
: In the course of designing the SSB part, I am of course facing the  
: problem of filtering the unwanted LSB.  
: I've talked on the air with several hams that seem pretty positive that  
: it is no more possible to find SSB Xtal filters in France.  
: Does someone have any clue regarding a possible US source for these ?  
: What I'd like to find out is a 10.7003 to 10.703 Xtal Filter, with at least  
: 60 dB at 10.6997 MHz. But a 9 MHz look-alike filter (or any IF) would  
: fit also.

10.7 MHz SSB filters are rather unusual. However, I'm surprised that amateur dealers don't sell useable filters. In the USA, you can often buy optional filters to put in your amateur transceiver to get a different bandwidth than what the radio came with.

However, the trend is to \*make\* your own filter out of microprocessor clock crystals. For roughly \$10 worth of crystals, you can make a

decent filter and have some crystals for the oscillator(s). They even sell 9 MHz crystals.

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Zack Lau KH6CP/1 2 way QRP WAS  
8 States on 10 GHz  
Internet: zlau@arrl.org 10 grids on 2304 MHz

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Date: 26 May 94 14:58:34 CST  
From: ihnp4.ucsd.edu!swrinde!news.uh.edu!ccsvax.sfasu.edu!ccsvax.sfasu.edu!  
f\_speerjr@network.ucsd.edu  
Subject: Transmitting Tube Cooling  
To: ham-homebrew@ucsd.edu

In article <1994May23.143229.2676@ccd.harris.com>, drs@ccd.harris.com (Elie Nasr) writes:

> I hesitate to post to this group anymore - I seem to get responses indicating  
> that I should know all the answers since I have an extra class license. Anyway:

Gosh, that's daunting. I have an extra ticket, too, and I know almost none of the answers.

>

> Anybody ever made any sort of measuring device for measuring the back pressure  
> in a cooling system for a transmitting tube? I have seen references to things  
> like so many cubic feet of air flow. Or .6 inches of backpressure. Or does  
> everyone just make sure they are running a blower that is over-rated just to  
> be safe? I'd prefer to do it right, since the bigger the blower, the more  
> noise present in the shack. Unless I put the blower in a different room! If  
> this is the sort of thing that interests others, you might post your comments  
> here rather than direct to me. Thanks....

>

> 73's Doug

I guess you could build some equipment to measure airflow or back pressure, but actually I think that's usually done by the blower manufacturer and reported as a design spec. In practice, what I've always done when building high power amplifiers is to use blowers similar to those I see in others' similar equipment. Not scientific, but it's usually worked.

And, yes, I've been in a few shacks in the old days where the final amp was in a separate room to keep the noise down. Some of those folks invested a good bit of effort in remote tuning gear, too.

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> --

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> | Doug Snowden |  
> | N4IJ |  
> | email: drs@ccd.harris.com |  
> -----  
>

Cheers & 73!

Jim K5YUT

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End of Ham-Homebrew Digest V94 #142

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